The NATIONAL GEOGRAPHIC MAGAZINE

Vol. XV JUNE, 1904 No. 6

CONTENTS

PAGE

The Work of the Bureau of Insular Affairs. By Colonel Clarence R. Edwards, U. S. Army. Illustrated . . . 239

Some Indications of Land in the Vicinity of the North Pole. By R. A. Harris, U. S. Coast and Geodetic Survey. Illustrated 255

Notes on Manchuria. By U. S. Consul Henry B. Miller . . 261

The Red Ant versus the Boll Weevil 262

Sir Henry M. Stanley 264

Map of the World on the Equivalent Projection 265

Some Recent English Statements about the Antarctic. By Edwin Swift Balch 266

Geographic Notes 267

Geographic Literature 269

Published by the National Geographic Society,
Hubbard Memorial Hall,
Washington, D. C.

$2.50 a Year REPRINT 25 Cents a Number

Entered at the Post-Office in Washington, D. C., as Second-Class Mail Matter

THE NATIONAL GEOGRAPHIC MAGAZINE

AN ILLUSTRATED MONTHLY, published by the NATIONAL GEOGRAPHIC SOCIETY, at Washington, D. C. All editorial communications should be addressed to the Editor of the NATIONAL GEOGRAPHIC MAGAZINE, Hubbard Memorial Hall, Washington, D. C. Business communications should be addressed to the National Geographic Society, Hubbard Memorial Hall, Washington, D. C.

25 CENTS A NUMBER; $2.50 A YEAR

Editor: GILBERT H. GROSVENOR

Associate Editors

GENERAL A. W. GREELY
Chief Signal Officer, U. S. Army

W J McGEE
Chief, Department of Anthropology and Ethnology, Louisiana Purchase Exposition

C. HART MERRIAM
Chief of the Biological Survey, U. S. Department of Agriculture

WILLIS L. MOORE
Chief of the Weather Bureau, U. S. Department of Agriculture

O. H. TITTMANN
Superintendent of the U. S. Coast and Geodetic Survey

O. P. AUSTIN
Chief of the Bureau of Statistics, Department of Commerce and Labor

DAVID T. DAY
Chief of the Division of Mineral Resources, U. S. Geological Survey

IDA M. TARBELL
Author of "Life of Napoleon," "Life of Lincoln," etc.

CARL LOUISE GARRISON
Principal of Morgan School, Washington, D. C.

WASHINGTON, D. C.

VOL. XV, No. 6 WASHINGTON JUNE, 1904

THE NATIONAL GEOGRAPHIC MAGAZINE

THE WORK OF THE BUREAU OF INSULAR AFFAIRS*

BY COLONEL CLARENCE R. EDWARDS, U. S. ARMY,

CHIEF OF BUREAU OF INSULAR AFFAIRS

IN the month of August, 1898, after the capitulation of the Spanish forces at Santiago de Cuba, the War Department was brought face to face with a unique problem, *i. e.*, the establishment of a properly qualified civil government under military control in the surrendered territory—a territory that speedily included Cuba, Porto Rico, and the Philippine Archipelago. The functions of an organized government, in harmony with American methods, had to be established in an unpromising field.

Officers of the Army were, as a rule, placed in charge, and they became, therefore, for the time being, civil servants; collected taxes, governed municipalities, enforced sanitary measures, established schools, adjusted claims, and, in short, performed almost every function of civil government. In a day, almost, they were called upon to govern more than twice as many people as inhabited the United States at the close of the Revolution.

The War Department found itself without adequate machinery to handle this new work. Its bureaus were restricted to military requirements, while the new conditions extended to all classes of governmental affairs.

The most important business which presented itself to the Department immediately after the organization of Santiago was the collection and disbursement of customs revenues. On August 23, 1898, the Secretary of War directed that all matters relating to the customs duties and taxes to be levied and collected as a military contribution upon the occupation and possession of any ports and places by the forces of the United States, under the several orders of the President, as published by the War Department, should be referred to the Assistant Secretary of War for his consideration and report.

The Chief Clerk of the War Department states that, for the sake of ready reference, the first of the Cuban customs cases that reached his desk were

*An address to the National Geographic Society, January 22, 1904.

filed in the long established record division. When several cases had accumulated he placed them in an empty file box on his desk. Papers of this nature and allied subjects accumulated so rapidly that the services of one clerk were granted to record these matters, which force was soon found to be inadequate to even enter them; therefore a few additional clerks were secured.

A translation of the Spanish tariff in force in the Island of Cuba was speedily prepared. Certain needed modifications were made in its provisions, and, under the supervision of an American customs expert, placed in operation at Santiago and other provinces as evacuated by the Spanish. A similar course of procedure was followed in Porto Rico after the withdrawal of the Spanish forces, as was also the case in the Philippines, and the large and increasing business in customs affairs drifted naturally to the same place.

The questions which arose in the new customs service during the first few months made evident the need for a new office, and this was emphasized as the time approached for the transfer of the entire Island of Cuba to our control, and our anticipated sovereignty over the Island of Porto Rico, on January 1, 1899. On December 13, 1898, by order of the Acting Secretary of War, there was created in the office of the Secretary of War the "Division of Customs and Insular Affairs." One distinct class, at that time supreme, was indicated by the word "customs." Other phases of civil affairs were embraced by the word "insular." To this new division were charged, without other record, all papers relating to the customs of Cuba, Porto Rico, and the Philippine Islands, as well as all civil affairs as distinguished from purely military matters, for final disposition. At this time there were but four clerks assigned to the records of the division at its creation, with orders to "keep them as you think best."

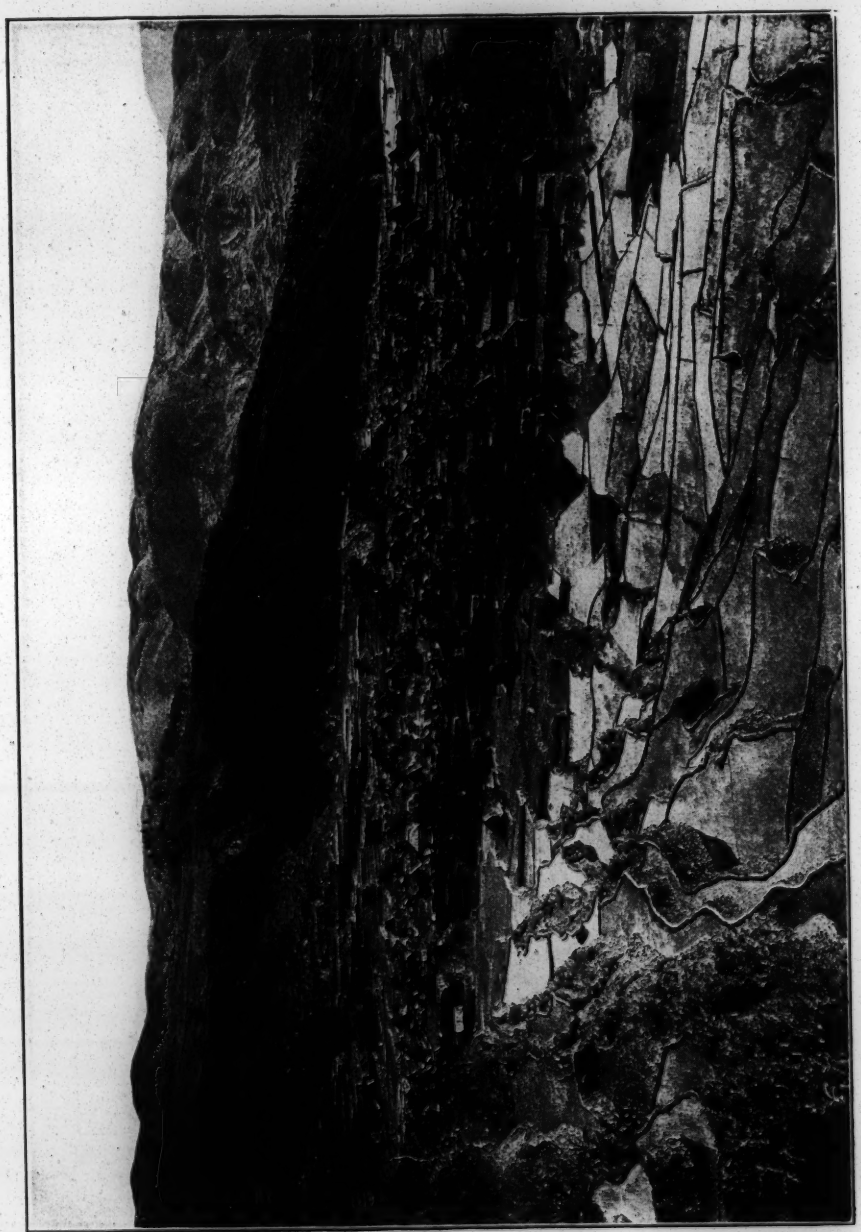
Up to February 10, 1900, one of the clerks was in charge, on which date the speaker reported to the Assistant Secretary of War and was assigned as chief. From this time the work, which had been steadily growing, increased by leaps and bounds, embracing many questions which the Secretary of War desired to bring to the attention of the Cabinet, so great was their importance. About May of the same year the division reported directly to the Secretary, and from that date the business of the division has had the personal supervision of that master mind of constructive statesmanship.

The Bureau of Insular Affairs takes pardonable pride in the first official comment made of its work by the Secretary of War in his annual report, dated November 27, 1901. It really is the best summary of the work up to that time accomplished by the office, as well as a statement of the conditions necessitating its creation. I will therefore take the liberty of quoting it in full.

"General policy of government.—The policy followed by the American Executive in dealing with the government of the Philippines (and also in dealing with the government of the other islands ceded or yielded by Spain which have been under the control of the War Department) has been to determine and prescribe the framework of the insular government; to lay down the rules of policy to be followed upon the great questions of government as they are foreseen or arise; to obtain the best and ablest men possible for insular officers; to distribute and define their powers, and then to hold them responsible for the conduct of government in the islands with the least possible interference from Washington.

"Notwithstanding a rigid adherence to this policy, and consistently with it, the demands upon the Department for action in the vast and complicated business in the island governments have

WOMEN'S WARD, LEPER HOSPITAL, SAN LAZARO.



IGORROTE VILLAGE AND TERRACES FOR RICE PLANTING.

been constant and imperative. Different civilizations, different systems of law and procedure, and different modes of thought brought into contact have evolved a great crowd of difficult questions for determination. New facts ascertained and changed conditions have called for the interpretation and application of our own rules of policy and the establishment of further rules. Different views as to the scope of authority under the distribution of powers have required reconciliation. The application of the law of military occupation to rights and practices existing under the laws of Spain and the process of overturning inveterate wrongs have brought about frequent appeals to the highest authority, which, being in the name of justice, have required consideration. The work undertaken has been the building up of government from the foundation upon unfamiliar ground. We have had no precedents, save the simple and meager proceedings under the occupation of California and New Mexico, more than half a century ago, and it has been necessary to decide every question upon its own merits and to make our own precedents for the future.

"For the performance of all these duties full and accurate knowledge of the conditions and proceedings of all the governments in all the islands on the part of the authorities in Washington has been required. It has been necessary to follow them step by step. The President and Congress have looked to the War Department for information as to how the trust of government in the various islands was being performed, and tens of thousands of applications by the people of the United States for every conceivable kind of information regarding the islands have poured into the Department in an uninterrupted stream.

"Only thorough system could arrange, record, and keep available for use the vast and heterogeneous mass of reports and letters and documents which this business has involved, furnish answers to the questions, conduct the correspondence, and keep the Secretary of War from being overwhelmed in hopeless confusion. The War Department had no machinery for the purpose. No provision for any such administrative machine was made by law. Of necessity, by the detail of officers and the employment of the temporary clerks authorized by law, such machinery has been created in the Department with a chief, an assistant chief, a law officer, a competent force of translators, accountants, stenographers, and recording and indexing and copying clerks. It is called the *Division of Insular Affairs of the War Department*, and it performs with admirable and constantly increasing efficiency the great variety of duties which in other countries would be described as belonging to a colonial office, and would be performed by a much more pretentious establishment."

This annual report of the Secretary of War was followed by recommendations which undoubtedly resulted in the following provision of "An act temporarily to provide for the administration of the affairs of civil government in the Philippine Islands, and for other purposes," approved July 1, 1902.

"SECTION 87. That the Division of Insular Affairs of the War Department, organized by the Secretary of War, is hereby continued until otherwise provided, and shall hereafter be known as the *Bureau of Insular Affairs of the War Department*. The business assigned to said Bureau shall embrace all matters pertaining to civil government in the island possessions of the United States subject to the jurisdiction of the War Department; and the Secretary of War is hereby authorized to detail an officer of the Army whom he may consider especially well qualified, to act under the authority of the Secretary of War as the Chief of said Bureau; and said officer

while acting under said detail shall have the rank, pay, and allowances of a colonel."

The Division of Insular Affairs, therefore, on July 1, 1902, became the Bureau of Insular Affairs of the War Department, and the Secretary of War in pursuance of the above authority detailed the speaker as chief.

Organization and Personnel.—The organization of this Bureau has been changed from time to time to meet the constantly changing conditions which the daily necessities demanded and has now been worked out into a permanent organization consisting of the following divisions: Correspondence, Record, Compilation and Cuban Records, Statistical, Accounting, Philippine Insurgent Captured Records, and the Purchasing and Disbursing Division. To this last Division is also attached the Philippine purchasing agency, or office, in New York, comprising a force of ten employés. This last force is paid out of Philippine revenues, while the force of the Bureau proper is paid out of United States funds, in the form of three separate lump appropriations of Congress. The present legislative appropriation bill, however, places this Bureau on a permanent basis by providing for a statutory classification of its various employés. The present force of the Bureau, which has been reduced, and which has accomplished the work, is composed of one law officer and a force of seventy-five employés, with the addition of an army officer temporarily detailed.

The Bureau of Insular Affairs is hard to define. It may be called a clearing-house for all questions as between the government of the Philippine Islands and the government of the United States. It is by the act above quoted a federal instrumentality of the United States and the representative in this country upon which the government of the Philippine Islands relies, through the Secretary of War, for proper presentation to Congress of all legislative requirements of the Philippine Islands, as well as to do those things in the United States required by the Philippine Islands of the governmental agency in the mother country.

As Mr Root has shown in the quotation above made from his report, the government of the Philippine Islands is in the Philippines, composed of men selected by the Administration for merit alone to govern under the broadest constitutional limitations, agreeable by analogy to the essential principles upon which our own government is established.

The study of successful colonial governments, especially of those far separated from the mother country, as in the present case of the Philippine Islands—some 10,000 miles away—shows they have been generally administered by a separate department of the home government. It will be admitted, I assume, by any one who has given thought to the subject, that if the government of the Philippine Islands was put in leading strings and the various divisions of the Philippine Government administration assigned to the different executive departments in this country, friction would ensue; that the entity created in the Philippines would be disturbed, and that comprehensive development would not be practicable.

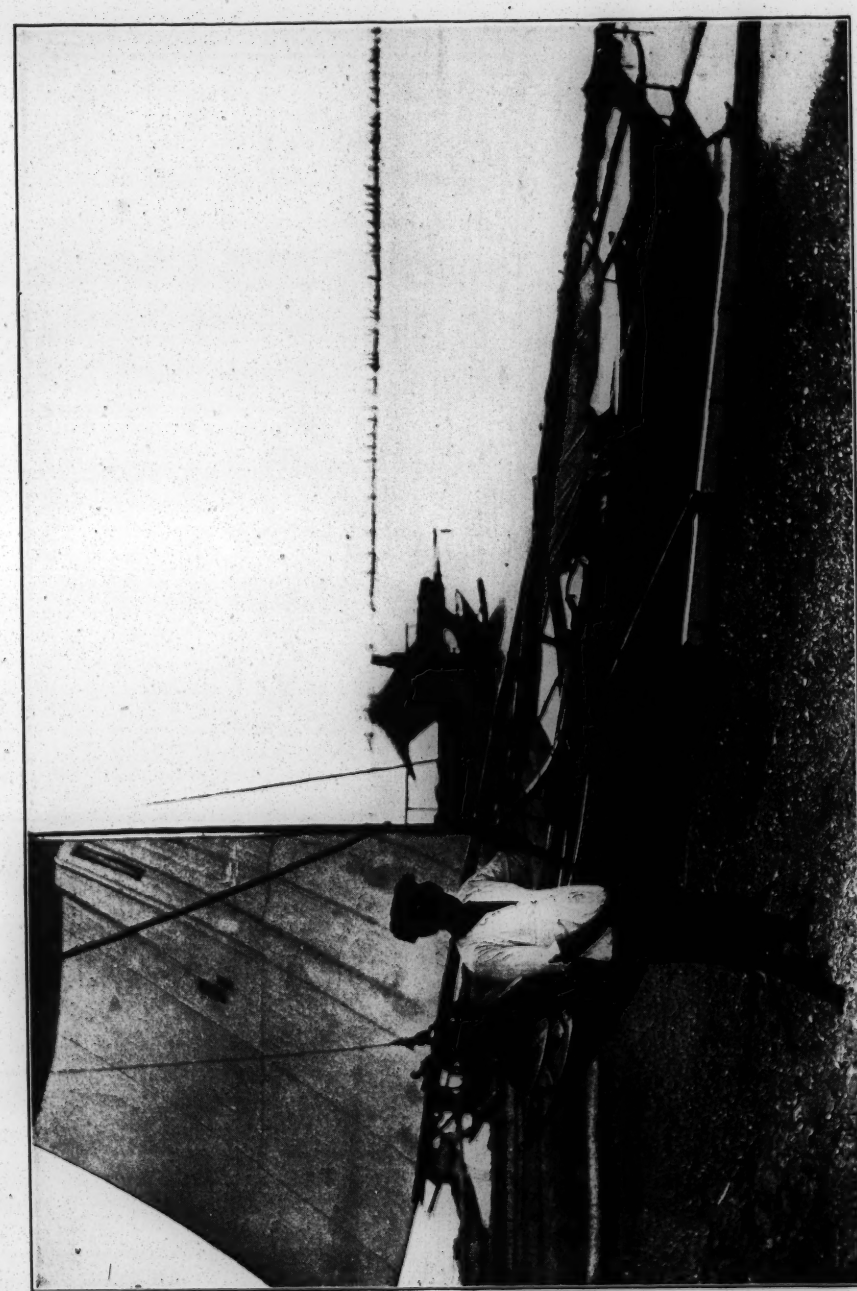
This policy has been recognized by the Administration that has had to do with the question of territory in the Orient, and the affairs of that government happen to be in the Bureau of Insular Affairs, which in turn, by a natural force of circumstances, happens to be in the War Department. I say natural, as the present civil government of the Philippines was made possible only by the admirable temporary civil administration of the military.

This transition from military to civil government was gradual, but took place

TEOSINTE READY FOR FIFTH CUTTING.

At the Malate experiment station marked success has been obtained in growing teosinte, one of the most valuable and productive of forage plants known. In general appearance it resembles Indian corn, with which it is closely related botanically, but, unlike corn, it produces many shoots from a single seed. Thirty or forty shoots have been counted growing from a single seed. A small plot of teosinte, planted January 6, gave five cuttings between March 21 and August 10, the growth at the last cutting being nearly 6 feet high and yielding at the rate of 16 tons of green fodder per acre. The total yield of green feed for the plot during the 4½ months specified was 49½ tons per acre, selling for $10 gold per ton. On well-fertilized ground and under proper management the Bureau of Agriculture states that during the year an acre should yield at least 100 tons.

The plant also matures its seed in the Philippines. The first experiments at seed production yielded at the rate of 800 pounds of thoroughly cleaned seed per acre, and this was secured during the dry season. Two and probably three crops of seed can be grown on the same ground during the year, which at the same rate for each crop, and at the prevailing prices for the seed, would give a return for seed alone of $1,440 gold per acre.



VINTA OR MORO SAILING BOAT, WITH SAMAL MAN.

as fast as it possibly could. Nothing could have been more fortunate than that, during the period of dual administration by the military and by the civil commission, or rather the gradual transition from the former to the latter, the lines of control of each reached the hands of one man in the War Department. Secretary Root possessed the power and authority and a definite object in view which we can justly say is today an accomplished fact in the Philippines.

The act of July 1, 1902, providing for the civil government in the Philippines, ratifies and confirms what we call the constitution of the Philippines—the Magna Charta given to the Philippine people by President McKinley, drafted by Secretary Root; in other words, the instructions of the President of April 7, 1900, to the Secretary of War for the Taft Commission. This act furthermore gives the necessary congressional authority to all functions of civil government in the Philippine Islands, and allows the Philippine Government in the Philippines the widest latitude. It gives them legislative, judicial, and executive powers. They collect and disburse all revenues accruing in the Philippine Islands. This act authorizes the Secretary of War to disapprove any act of the Philippine Commission—a power in the thousands of acts passed by the Commission which has not yet in a single case been exercised.

The collection of information for the President, the Secretary of War, and Congress, which has resulted in United States laws relating to the Philippines, has put a vast amount of work on the Bureau of Insular Affairs.

On May 1, 1900, civil government was given to Porto Rico, and the War Department lost jurisdiction over the same. This law provided that once a year the civil governor was to report to the President. Today she is an orphan in her daily relations with this country. Full information about her and her affairs, outside of these annual reports of the civil governor, can only be gained by writing to the governor.

Cuba, on May 20, 1902, became a foreign government. The work by the intervening military government that made that possible is of vivid recollection in the Bureau. The information that was necessary for Congress to possess in order to enact the necessary legislation relative to the turning over of that government was furnished by the Bureau, and it believes it played quite a part in the treaties which have just been ratified by the Cuban Government.

The records of the United States military government of Cuba have been brought to Washington and are now thoroughly arranged in a separate building, as an annex of this Bureau, under a force of clerks, for constant reference and the furnishing of information to both Cuba and the United States. I will therefore thus hastily pass over the work done in connection with Porto Rico and Cuba and direct your attention to what has been and is being done in the far-away Philippines, where the civil government has so developed as to more than make up for the time and labor gained when we were relieved of the charge of Porto Rican and Cuban affairs.

First, however, let me speak of the important branch of the Bureau under the direction of its law officer, Charles E. Magoon.

It will incidentally show the scope of the work of the Insular Bureau, for law questions were not examined excepting when raised in actual cases pending in the War Department, and after those questions had been investigated and the course to be pursued ascertained it devolved upon the Bureau to do the work. The questions thus presented to the War Department developed a broad field for investigation, including the law

of military occupation, the laws and usages of civilized warfare, international law, interpretation of the Constitution of the United States, interpretation of treaties respecting the territories subject to military occupation, the status of the territories and inhabitants acquired during the war with Spain, the laws of Spain rendered ineffective or remaining in force in said islands, the effect of the transfer upon the obligations of the previous sovereignty, the rights of individuals and communities affected by the action of the military government, the administration of military government by civilian officials, and the law respecting claims against the United States based on military operations, encampment of troops, conduct of soldiers in territory affected by the war.

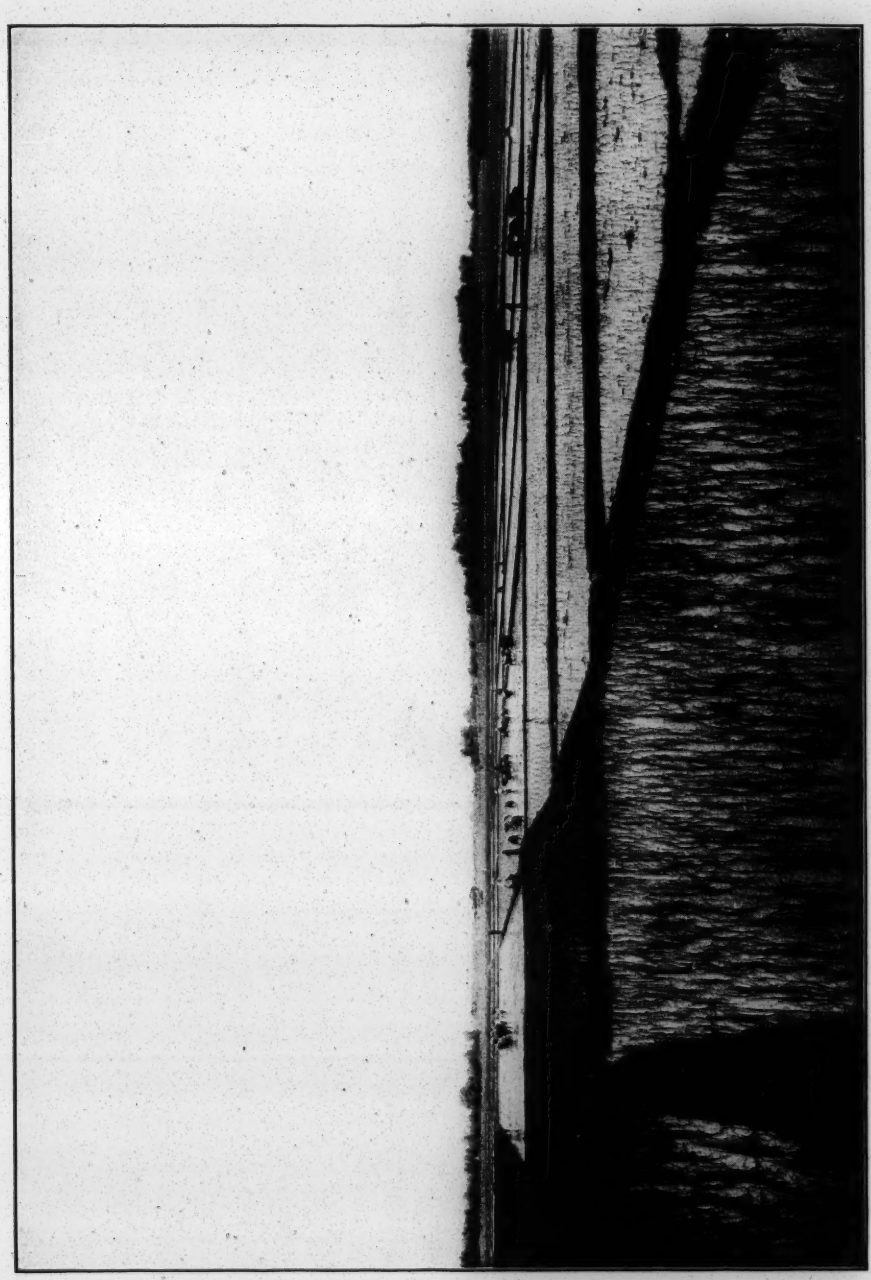
Some of the many questions thus generally summarized could not be disposed of by adherence to rules already established by judicial decisions, for questions arose which had not been judicially determined. It was therefore necessary to extend the investigation into the field of history, and see if the same or similar questions had arisen in the several instances of previous acquisition of foreign territory by the United States, and to learn how the question had been dealt with by the legislative and administrative branches of the government of the United States. To ascertain the treatment accorded by the legislative branch of our government to the territory and inhabitants of the Northwest Territory, Louisiana, East and West Florida, Texas, New Mexico, and Upper California, Oregon and Alaska, Samoa, the Guano Islands, and the Hawaiian Islands required a review of congressional debate and legislation extending over more than one hundred years, while the treatment afforded by the administrative branch required a review of the reports of the several departments of that branch, embodied in many annual and special reports to Congress and now buried in that *terra incognita* known as congressional documents.

The reports on the subjects above outlined have been compiled and published in book form, making a volume of over eight hundred pages. The work has received universal commendation from the press and public without regard to party affiliations or personal views on the course pursued by the War Department in matters pertaining to insular affairs. The *Review of Reviews* said of the work:

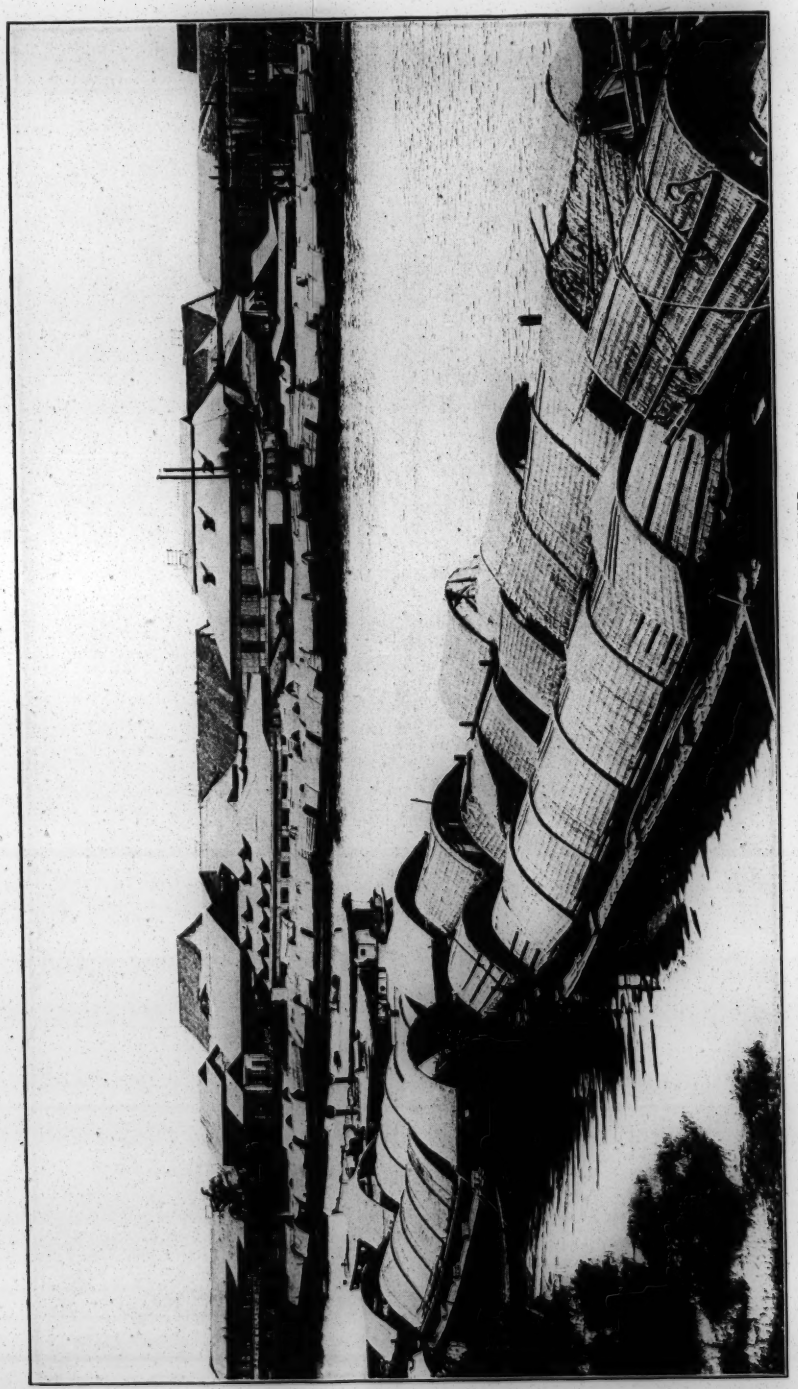
"Nothing could illustrate better than this volume the vast number of intricate questions that have arisen in the course of our conduct of affairs in the islands formerly belonging to Spain, nor could anything throw more light upon the care with which the War Department has studied all the principles and precedents of constitutional and international law in its treatment of every issue that has arisen."

The work of the law officer during the past year evidences that the government of the Philippine Islands has entered the second stage of its development. Prior to this year the principal questions pressing for consideration arose from the relations sustained by the territory and inhabitants of the Philippine Islands to the federal government of the United States under the laws of war and of nations, the treaty of peace and cession, the principles on which our government is founded, and the theories of governmental administration prevailing in the United States. During the current year the questions presented have been largely questions involving the relations sustained by the existing civil government of the islands to the preceding military government and to the federal government as created or regulated by congressional enactments.

The transfer of the powers of civil government from the military authorities to civilian officials, and the substitution of a government under a code



RICE PADDIES.



INHABITED CASCOS LYING IN THE PASIG RIVER.

Fifteen thousand people of Manila live on these boat rafts.

civil, based upon an act of Congress, in the place of a government under the code military, deriving its authority from the laws of war, made it necessary to formulate regulations and procedure for the enforcement of numerous provisions of congressional enactments affecting the Philippine Islands—such, for instance, as the provision of the act approved March 8, 1902, that "all articles the growth and product of the Philippine Islands admitted into the ports of the United States free of duty under the provisions of this act, and coming directly from said islands to the United States for use and consumption therein, shall be hereafter exempt from any export duties imposed in the Philippine Islands;" or the provisions of section 8 of the act approved March 2, 1903, authorizing the treasurer of the Philippine Islands to accept deposits of Philippine pesos and issue silver certificates therefor.

In some instances questions have arisen as to the effect on the interests of the federal government of certain legislation enacted by the legislative branch of the government of the Philippine Islands—such, for instance, as, What articles intended for the use of the personnel of the army are to be admitted free of duty? or, What expenditures of the military authorities are subject to review by the auditor of the islands?

The establishment of a judicial system in the Philippines affords a means for the adjudication of litigated questions between the inhabitants and of many questions respecting the jurisdiction and authority of the officials of that government. Whenever possible, controversies are referred to those tribunals. In some instances questions have arisen affecting the action or authority of officers of the executive department of that government in matters controlled by the discretion of the administrative branch and affecting the administration of civil affairs. These questions are considered and determined by the War Department, upon investigation and report by the law officer.

In general, the numerous questions inevitable from the change in government have been anticipated and provided for in advance of an actual instance arising, and it is a gratifying fact that few controversies and no serious disagreements have arisen, while such differences of opinion as developed were readily adjusted. The officials of the military and civil establishments in the Philippine Islands have at all times exhibited an earnest desire for effectual coöperation and coördination, and that purpose has been promoted by the fact that the Bureau of Insular Affairs, when called upon to investigate controverted questions, has been able to appreciate the point of view of both the civil and military authorities.

PHILIPPINE ACCOUNTING-AUDITING SYSTEM

There has been a double aspect to the auditing of the accounts of the insular government under the War Department. One is the responsibility of the officers who handle insular funds to the government of the Philippine Islands, and the other is the responsibility of this government to the government at Washington, whose duty it is to see that all the checks and safeguards which Congress has placed about the public moneys of the United States have also been applied to the revenues of the islands. One branch of this Bureau is organized and devoted to this work. The rules and instructions governing the auditing system of the Philippines, which practically put into force the accounting and auditing system of the United States, adapted by experience to local conditions, with added checks and safeguards, were made here. Under a law of the Philippine Commission which has been ratified and indorsed by act of Congress of July 1, 1902, before mentioned, state-

ments of all receipts and expenses are directly reported to this Bureau—that is, statements of accounts are all entered in ledgers under a carefully thought-out accounting system and a carefully tabulated statement of all receipts and expenditures made to Congress. It is difficult to make clear to one not acquainted with the facts the amount of work this involves. These accounts for the Philippines up to June 30, 1902, cover 12,600 closely typewritten pages. These sheets, after being sent to Congress, have been printed as documents, and are there open to anybody interested in our stewardship of the island possessions.

The duties of the auditor cease, so far as this Bureau is concerned, when each individual account settled by him in the Philippines has been certified. The work performed here is considered a comptroller's review of the fiscal affairs of the islands, and discrepancies or errors arising from whatever cause in the accounts of an officer can be immediately discovered and adjusted. This Bureau is therefore enabled at all times to furnish correct and detailed information relative to the receipts and expenditures or to any disbursing officer's accounts in the islands.

PHILIPPINE TARIFF

Upon the occupation of Manila the old Spanish tariff was made effective until such time as more pressing affairs would permit of a revision. In June, 1900, a board of officers was appointed at Manila to revise the tariff, and said board invited suggestions from the merchants of that city, and informed themselves as to what should be done in the matter of revision. In August of the same year the board was instructed to turn its work over to the new Philippine Commission, and it, after investigation, forwarded a draft of the tariff to Washington. It was received February 9, 1901, and printed immediately as a "proposed" tariff, and sent to the more important journals and trade papers in the country, as well as to manufacturers, exporters, and others, asking that they make any suggestions desired, and their expression was invited in order to make a tariff that would be both fair to the revenues of the islands and equitable to the exporter and consumer. After all suggestions had been received the entire tariff was carefully studied, paragraph by paragraph, every suggestion was considered, a number of guarded changes were made, and the appraiser of the New York custom-house was asked to go over it for any possible changes in the classification or descriptive language that might make its application as free as possible from ambiguity. It was then printed, translated into the Spanish language, and forwarded to Manila. No tariff could have been given more careful legislative consideration at both ends of the line. When Congress assembled the tariff was presented to that body for ratification. As a unique feature in tariff legislation, it may be said that the Philippine tariff passed both Houses of Congress, after four months' discussion, without a single paragraph or rate of duty prescribed by it criticised by any member of either party in either house. The tariff has been a success; the revenues have increased under its operation, in spite of fearfully adverse conditions that ought to have decreased the revenues.

Cholera has raged throughout the islands. How many victims it has claimed can not be told until the census has been completed; but by comparison with the former visitation of cholera, I should not be surprised to find that it claimed from five hundred thousand to eight hundred thousand victims. Rinderpest has killed over 95 per cent of the carabaos, the native work cattle—enough to paralyze agriculture. Surra, a form of glanders, has been found as fatal to the horses, and a drought has been

A COCOANUT RAFT FROM LAGUNA IN ONE OF THE ESTEROS OF MANILA.

MOROS CARRYING A WOOD SAMPLE—TWO MOROS GOING AHEAD TO CUT A PATH THROUGH THE JUNGLE.

Two small vines of green rattan will hold the heaviest sample.

The Bureau of Forestry of the Insular Government is making a systematic survey of the diverse woods of the Philippine Islands.

experienced in the past two years worse than anything that has been known in sixty years; but probably the Philippines has experienced its worst luck in the two years' visitation of locusts, which have destroyed everything in their path. Yet, in spite of this, as I say, the revenues have increased, and last year, for the first time since American occupation, a balance of trade in favor of the islands to the extent of $150,000 is shown. The following table shows the increase of the total imports and exports each year:

1899	$25,479,922
1900	40,352,504
1901	53,494,354
1902	56,069,521
1903	66,093,662

I am officially informed that no serious inequalities have been found in the tariff.

To be concluded in July number

SOME INDICATIONS OF LAND IN THE VICINITY OF THE NORTH POLE*

By R. A. Harris,

U. S. Coast and Geodetic Survey

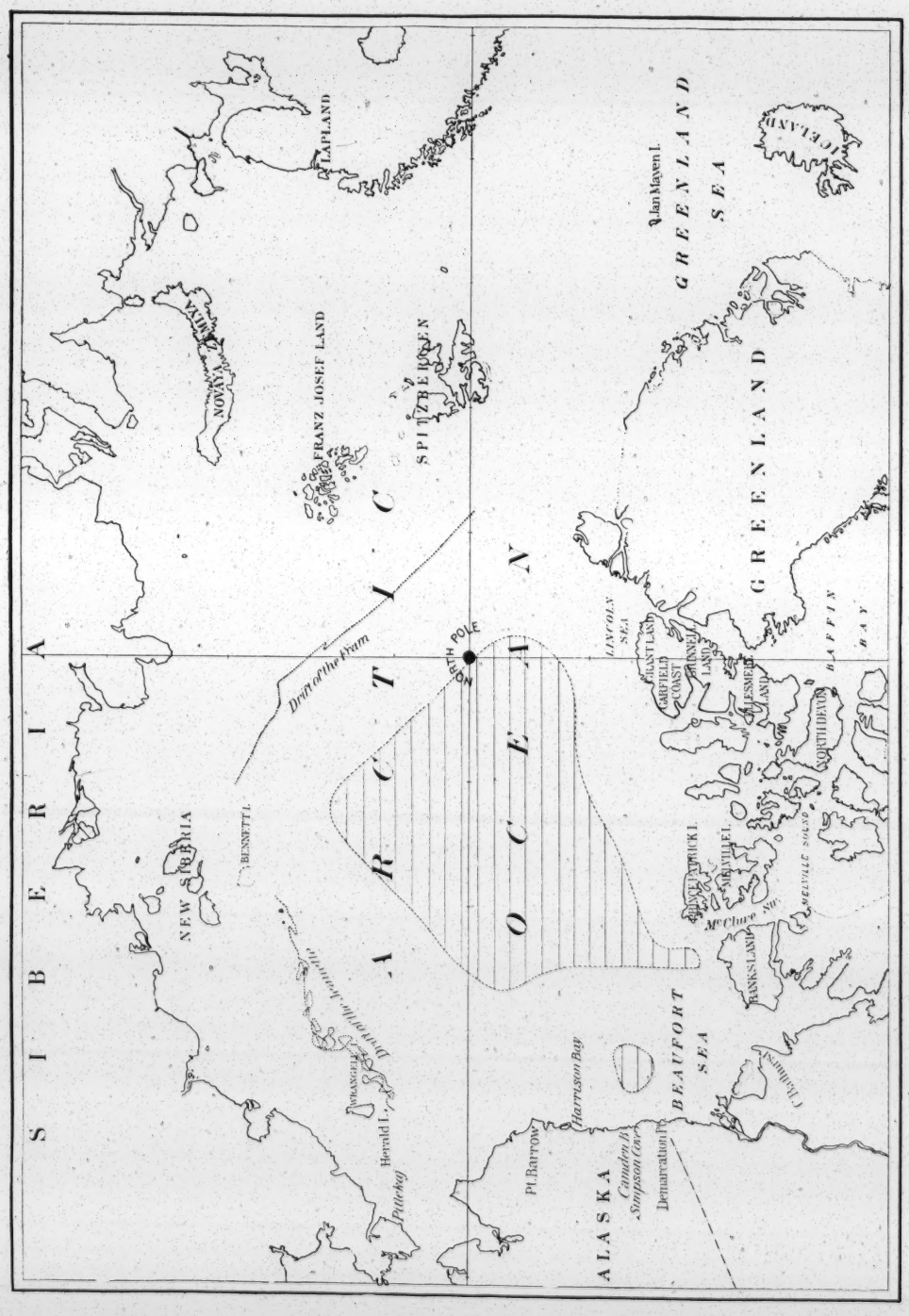
IT is a well established fact that there are two important surface currents (or drifts) in the Arctic Ocean. One of these flows easterly along the northern coast of Alaska, through the Arctic Archipelago, finally reaching the Atlantic Ocean through Davis and Hudson Straits. The other starts in the neighborhood of Herald Island, northwesterly from Bering Strait, and thence flows northwesterly, passing to the north of New Siberia; thence to the north of Franz Josef Land and the Spitzbergen Islands, and through Denmark Strait to and around Cape Farewell. Therefore these currents are near together when north of Bering Strait and again when in the vicinity of southern Greenland.

Some evidence of the American current may be cited. The ships *Advance* and *Rescue*, of the first Grinnell Expedition, were for a while carried northerly in Wellington Channel by the drifting ice; but when near the northern end of the channel the current reversed, and thereafter they were carried southerly and easterly through Barrow Strait, Lancaster Sound, Baffin Bay, Davis Strait to latitude 65° 30′ N., where they got themselves free from the ice. The amount of southeasterly drifting measures about 1,000 nautical miles, and required a little more than six months, extending from November, 1850, to June, 1851. This gives an average rate of 5 miles per day.

In May, 1854, the British ships *Intrepid* and *Resolute* were abandoned off the western end of Barrow Strait. The *Resolute* was picked up off Cape Mercy, in the south end of Davis Strait, in September, 1855. During these 16 months 1,100 miles were covered, making an average rate of 2⅓ miles per day.

Strong easterly currents are encoun-

*Read before the Philosophical Society of Washington, April 9, 1904. Communicated to the National Geographic Magazine by O. H. Tittmann, Superintendent of the U. S. Coast and Geodetic Survey.



Map of Arctic Regions, Showing Outline of Indicated North Polar Land

tered in Fury and Hecla Straits and in Bellot Strait.

Northeasterly currents off the northwestern coast of Alaska have been noted by Captain Collinson,* and easterly currents along the northern coast by Captain McClure.† Collinson noted an eastern set in Dease Strait far to the east,‡ and McClure found a large quantity of American pine, almost certainly from the Mackenzie River, drifted into Prince of Wales Strait.§

McClure Strait is constantly filled with ice, probably coming in chiefly from the west.

The existence of the current far to the north of Russia is pretty well established by the drifting of the steamship *Jeanette* from Herald Island to a point northeast of New Siberia where she was crushed in the ice, and by the subsequent drifting of some papers and clothing from the sunken vessel across the polar sea to Julianehaab, near Cape Farewell. The *Jeanette* was frozen in the ice September 6, 1879, and was crushed June 12, 1881, having made good a distance of 600 miles. During the last five of these 21 months much more than half of all the distance made good was covered, and during the last 26 days almost one-sixth. The relics were picked up in 1884, or three years after the sinking of the boat, having gone a distance of at least 2,900 miles.

Before undertaking his famous voyage in the *Fram*, Nansen adduced, as further evidence of this current, the finding on the coast of Greenland of an implement which almost certainly came from the Alaskan Eskimos in the vicinity of Bering Strait; also the prevalence of driftwood on the Greenland coasts and the north coast of the Spitzbergen Islands, the species indicating that a large portion of this wood came from northern Siberia.

The voyage of the *Fram* verified his previous calculations in a remarkable manner. That vessel became fast in the ice at a point northwesterly from New Siberia, September 22, 1893. It thence drifted to a point north of the Spitzbergen Islands, having passed about midway between Franz Josef Land and the North Pole. It was released from the ice June 14, 1896, thus having drifted for 33 months, the distance made good being 900 miles. At the beginning of the drifting the rate of the current was a little more than half a mile per day, and increased to one mile near the end.

Having established the existence of these two prevailing surface currents, and noting that both eventually flow to southern Greenland, the question arises as to why the *Jeanette* did not drift almost due north, instead of bearing off to the west. The *Fram* went almost directly toward the eastern coast of Greenland. It is true that after the loss of the *Jeanette*, Commander De Long and his party found themselves on ice drifting rapidly northward. As already noted, the last 26 days' drifting of the boat covered about one-sixth of the entire distance. These facts suggest a broad strait north of Bennett Island, beyond which is the corner of a large tract of land dividing the deep Arctic channel traversed by the *Fram* from the shallow sea through which the *Jeanette* drifted. The final accelerated rate and northward direction of De Long's drift seem to indicate proximity to this strait.

This sea extends from Bennett Island to Banks Land. It is about 30 or 40 fathoms deep along the track of the *Jeanette*, and perhaps from 100 to 200 fathoms west of Banks Land, where it is known as Beaufort Sea.

That land probably extends to the north of Beaufort Sea can be inferred from the fact that the ice found here is

* Collinson: Journal of H. M. S. *Enterprise*, edited by his brother, pp. 137–142.

† McClure: The Discovery of the Northwest Passage, edited by Osborn, p. 71.

‡ Collinson: L. c., p. 291.

§ Richardson: The Polar Regions, p. 232.

very old, the sea seeming to have no broad outlet through which the ice can escape, as it does north of Siberia. The openings to the east are long and rather narrow channels. This does not argue against a tolerably broad expanse of water extending westward; for, the currents setting eastward prevent the ice from escaping to the west. It seems probable that land, continuous or nearly so, must extend far westward from off Banks Land; for, this supposed land and the eastward currents might well explain why it is that the ice never recedes far northward from the northern coast of Alaska nor westward from Banks Land.

Osborn thus speaks of the ice encountered by McClure in Beaufort Sea: "Ice of stupendous thickness and in extensive floes, some seven or eight miles in extent, was seen on either hand; the surface of it not flat, such as we see in Baffins Strait and the adjacent seas, but rugged with the accumulated snow, frost, and thaws of centuries."*

Such are the arguments for the existence of a tract of land extending from near the northwest corner of Banks Land, or from Prince Patrick Island, to a point north of New Siberia, based upon the drifting of the ice on the one hand and upon its age and comparatively slight movement on the other hand.

Let us next consider what are the indications from the tides. In the first place, the tide at Point Barrow is semidiurnal in character, with a mean range of 0.4 foot, the flood coming from the west. This can not come through Bering Strait, because the tide immediately south of the strait has scarcely 1-foot range, with a large diurnal inequality, and at a short distance north of the strait, at Pitlekaj, where the *Vega* wintered in 1878–'79, the range of the semidiurnal tide was carefully measured and found to be only 0.2 foot. Whence comes the Point Barrow tide? It can not come from the north or east, because all observers agree that the flood comes from the west, and that it is high water on the western side of the point considerably earlier than on the eastern.* De Long's party made careful observations upon the tide at Bennett Island, and these show a range of 2 feet. Such a range, diminished by the broadening of the shallow sea to the east of this island, might well be reduced to that found at Point Barrow, provided one considers that the range generally diminishes off headlands and capes. On the other hand, if no land exists north of Point Barrow, how can the tide there be much less than that found at Bennett Island, and how can the flood come from the west? For, practically all of the Arctic Ocean tide is derived from the Atlantic, chiefly through the Greenland Sea, and without land near the Pole one of these stations would be reached about as well as the other.

The reasons for not drawing the boundary straight from the Bennett Island corner to the Banks Land corner, but deflecting it to the south, are, first, the apparent necessity for such a bend in order that the direction of the flood may better accord with observation, and that the times of the tides of northern Alaska may be consistent with those at Bennett Island, and, second, the small north-and-south movement of the ice north of Alaska indicating that the sea is here probably narrower than it is farther west, or north of Siberia.

In the extreme north this land can not extend much beyond the Pole toward Franz Josef Land, because this would undoubtedly have there caused a bend in the track of the *Fram's* drift.

* McClure: L. c., p. 83.

* Thomas Simpson: Discoveries on the North Coast of America, 1836-1839, pp. 161, 162, 167.

Accounts and Papers, Navy, vol. 42 (1854), p. 162.

Lieut. P. H. Ray: Report of the International Polar Expedition to Point Barrow, Alaska, p. 678.

Furthermore, the undiminished range of tide at Bennett Island perhaps indicates that the Nansen channel does not greatly broaden at the Pole.

Between this supposed land and the islands recently discovered by Sverdrup may be other islands, forming a continuation of the Arctic Archipelago and separated from one another by channels of moderate depths, or perhaps this land approaches the Garfield Coast and Grant Land. At any rate, the range of tide diminishes from 2 feet at Cape Sheridan to 1½ feet at Northumberland Sound, Penny Strait; and Lockwood and Brainard judged the tide to be small at Greely Fiord. These indicate that the access of the tide from the north is not altogether unrestricted; in fact, part of the tide at Northumberland Sound comes from the east through Belcher Channel.

We come now to another question. A few tides have been observed along the northern coast of Alaska by the explorer, Thomas Simpson.* They show that the tide on the outer coast occurs nearly simultaneously from Point Barrow to Camden Bay and Simpson Cove. But as the international boundary line is approached a great change takes place: the tide at Demarcation Point, not 100 miles farther east, is about seven hours later in its time of occurrence. Observations are not sufficient for showing how this change takes place, but it certainly occurs. The set of the flood along the outer coast is given as easterly for all points where it has been observed from Point Barrow to and beyond Cape Bathurst; but such observations are very meager, probably on account of the smallness of the tide. This would seem to preclude the possibility of the principal part of the tide coming from the north or east; hence the probable approach of the polar land to Banks Land, or to Prince Patrick Island, or to Grant Land.

*Simpson: Discoveries on the North Coast of America, 1836–'39, pp. 115, 117, 121–123, 132, 138, 161–162, 167, 178, 183.

Suppose an island about 100 miles in diameter to be separated from the coast by a shallow strait about 75 miles wide in its narrowest part. By assuming that deeper water exists to the west of the strait and island, and that the tide comes from the west, it seems possible to account for the sudden change in the time of tide; for, the main wave, going north of the island, would control the time of the tide to east of it and in Mackenzie Bay, and deep water west of the island and shallow strait would cause the tide at Camden Bay and westward to occur remarkably early, just as if this coast were at the head of a deep, suddenly-terminated canal extending northwesterly.

Immediately eastward from this supposed strait both Simpson* and McClure† found that the waves became more like those upon a sea of some magnitude, and the latter, sailing a little north of east, found the depths to rapidly increase from 9 to 32 fathoms, and soon to 195 with no bottom.

Now, the question is, Why this more sea-like appearance, unless some huge obstruction lies immediately to the west? It may, of course, be partly due to the open water caused by the influx of the Mackenzie.

It will be of interest to note that several Arctic authorities have at various times suspected or inferred the existence of land near the Pole.

Richardson says: "The Eskimos of Point Barrow have a tradition, reported by Mr Simpson, surgeon of the *Plover* [in 1832], of some of their tribe having been carried to the north on ice broken up in a southerly gale, and arriving, after many nights, at a hilly country inhabited by people like themselves, speaking the Eskimo language, by whom they were well received. After a long stay, one spring in which the ice remained without movement they returned without mishap to their own

*Simpson: L. c., p. 176.
†McClure: L. c., p. 82.

country and reported their adventures. Other Eskimos have since then been carried away on the ice, and are supposed to have reached the northern land, from whence they have not as yet returned. An obscure indication of land to the north was actually perceived from the masthead of the *Plover* when off Point Barrow." *

On August 15, 1850, Captain McClure, anchored off Yarborough Inlet, about half way from Point Barrow to Demarcation Point, writes:

"The packed ice today, as far as the eye can reach, appears solid and heavy, without a drop of water discernible. The refraction has been considerable, giving to the edge of the pack the appearance of a continuous line of chalk cliffs, from 40 to 50 feet in height. From the light shady tint, which in different parts of the pack is distinctly visible, I should be inclined to think that there may be many of the same kind of islands as those we have met with, extending to the northward, and impeding the progress of the ice, thereby keeping this sea eternally frozen." †

Captain Collinson, who wintered at Simpson Cove, 1853–1854, actually undertook a sledge journey in the spring northward, one object of which was to see if land would not be reached. The roughness of the ice caused him soon to abandon the project. He writes:

"I therefore returned, and with sorrow gave up an attempt which . . . I had looked forward to with much interest; thinking that, with anything like a favorable road, I should reach 73° N. latitude, and settle the question with regard to the open sea, which certainly does not appear to exist here in the same manner as it does to the north of the Asiatic continent." ‡

In 1873 Admiral Sherard Osborn read a paper before the Royal Geographic Society in which he predicted the existence of an archipelago or land extending from near Prince Patrick Island up very near to the Pole and thence to Wrangell Island, thus forming the northern boundary of a nearly inclosed sea. *

A probably less happy prediction was made by Petermann, who contemplated land extending northeasterly from Greenland, thence across the Pole to Wrangell Island.

Sir Clements Markham is quoted as having said in November, 1896:

"Personally, as I do not believe in any land near the Pole, or on this side of it beyond Franz Josef Land, I trust an attempt will be made to explore another portion of the Arctic regions. I believe there is land, probably in the form of large islands, between Prince Patrick Land and the New Siberia Islands." †

Prentiss discredits there being much land north of Bering Strait, but his reasons for so doing can hardly be regarded as convincing.

ADDENDUM

Since reading the above paper, I accidentally came across a paper by Marcus Baker, in Volume 5 of the NATIONAL GEOGRAPHIC MAGAZINE, entitled "An Undiscovered Island off the Northern Coast of Alaska." He suggests that the supposed land be called Keenan Island. The following statements are there furnished by Captain Edward P. Herendeen, who for many years was engaged in whaling:

"It is often told that natives wintering between Harrison and Camden Bays have seen land to the north in the bright, clear days of spring.

"In the winter of 1886–'87, Uzharlu, an enterprising Eskimo of Ootkeavie,

* The Polar Regions, p. 240.
† McClure: L. c., p. 81.
‡ Collinson: L. c., p. 312.

* Clements R. Markham: The Threshold of the Unknown, pp. 216–224.
† Prentiss: The Great Polar Current, p. 105; see also p. 19.

was very anxious for me to get some captain to take him the following summer, with his family, canoe, and outfit, to the northeast as far as the ship went, and then he would try to find this mysterious land of which he had heard so much; but no one cared to bother with this venturesome Eskimo explorer. So confident was this man of the truth of these reports that he was eager to sail away into the unknown, like another Columbus, in search of an Eskimo paradise."

"The only report of land having been seen by civilized man in this vicinity was made by Captain John Keenan, of Troy, New York, in the seventies. He was at that time in command of the whaling bark *Stamboul*, of New Bedford. Captain Keenan said that after taking several whales the weather became thick, and he stood to the north under easy sail, and was busily engaged in trying out and stowing down the oil taken. When the fog cleared off, land was distinctly seen to the north by him and all the men of his crew; but, as he was not on a voyage of discovery and there were no whales in sight, he was obliged to give the order to keep away to the south in search of them. The success of his voyage depended on keeping among whales.

"The fact was often discussed among the whalemen on the return of the fleet to San Francisco in the fall. The position of Captain Keenan's ship at the time land was seen has passed from my mind, except that it was between Harrison and Camden Bays."

It will be noticed that these statements would place the island a little to west of the position shown on the accompanying map.

NOTES ON MANCHURIA

By U. S. Consul Henry B. Miller, Niuchwang, Manchuria

I BELIEVE there is no place in the world where the wagon or cart traffic is equal to that of Niuchwang. The carts compete with the railroads in a haul of 400 miles or more. During the winter months, when the roads are firmly frozen, there are not less than 2,000 carts, each carrying two tons, per day coming to the port, each drawn by from four to seven mules or ponies. Some of these carts are from thirty to forty days on the roads, in order to reach the market. It is under such conditions as these that the trade of Niuchwang, amounting to nearly $20,000,000 per year, has grown. It is a mistake to attribute the growth of this trade to the building of the Russian railway. The railways are just beginning to have an influence toward improving the trade of the country, and the natives are only beginning to alter their methods to meet these new conditions. It is plain that the railways will add much to the development of the productiveness and trade of the country, but that remains for the future to show. The country has made this marvelous growth independent of the railways, and what it will do with them will depend upon the wisdom of the railway management.

Before 1902 practically all the foreign trade in Manchuria came through the port of Niuchwang, and the Chinese annual customs returns gave the complete statement of imports and exports for all the country. This was altered to a considerable extent by imports and exports in 1902 through Dalny, Port Arthur,

and Vladivostok. In 1903 the situation changed still further, and foreign imports now enter through Niuchwang, Dalny, and Port Arthur via Tientsin, Chin Wang Tao, and thence by rail over the Chinese railway recently completed to the River Liao at Shin Min Tun; also by the Russian railway from Vladivostok and Siberia and Russia. Another important route has been opened into Manchuria from the sea up the Amur River and thence up the Sungari River by large river steamers to Kirin.

There are no records telling the origin of the goods imported. American goods reach here in many ways. Some come from Hongkong and Canton, large quantities from Shanghai, and some from Japan, while much American cotton is manufactured into yarn and goods in Japan and then shipped to this place.

NATURAL WEALTH OF MANCHURIA

The year 1903 was the best that Manchuria has ever known as to its production. Crops were unusually good, and prices were also good. Both Manchuria and Mongolia are marvelously rich, and, under a good government, with transportation provided and its timber and mineral wealth developed and added to its agricultural resources, Manchuria will prove one of the greatest markets for United States goods, as well as a splendid field for the investment of United States capital. In 1894 and 1895 it was the field of war between China and Japan; in 1900 it was the district of the Boxer movements that were so destructive, and now again, in 1904, it is the theater of war between Russia and Japan.

Notwithstanding all these wars, the country continues to grow in productiveness and commerce. Its people are largely industrious, frugal, and capable, and need only an enterprising, substantial, and honest government to insure them great prosperity.

Manchuria is not yet thickly populated, and farms are mostly in large tracts of 100 and 200 acres, and even more. The great commercial development has come as a result of its agricultural development and the settlement of the country by agricultural people from other parts of China.

Although the country is extremely rich in minerals, including coal, iron, copper, silver, gold, and other kinds, these have only been worked in a small and crude way by the natives. When the mineral wealth is developed and worked by modern methods in a manner fitting its economic possibilities, Manchuria will prove to be one of the richest sections of Asia.

It has the happy combination of a splendid variety and vast quantities of minerals, valuable forests, great agricultural wealth, and an industrious, capable people, whose labor is, perhaps, the best in the world for its cost. In addition, it has good waterways and easy grades and a country in which railway construction and operation is very economical. All of these advantages are combined with a healthy, invigorating climate, where crops never fail.

THE RED ANT VERSUS THE BOLL WEEVIL

A MIGHTY interesting and efficient little insect, a red ant, worth perhaps a quarter of a billion dollars annually to our country, has been discovered among the Indian cotton fields of Guatemala by O. F. Cook, of the Department of Agriculture. It is believed when introduced into our Southern States the ant will save us millions, perhaps hundreds of millions,

of dollars each year by checking the boll weevil pest, whose ravages have become so terrible of late. During the past three years the boll weevil has cut in half the value of the cotton harvest of ten counties of Texas which it has invaded. All efforts to check the weevil have been in vain. It has spread with the rage of an epidemic, until the Southern States are dreading that they will see one-half or all of their cotton crop, whose normal value is $500,000,000, swept away. The boll weevil is a kind of beetle, living on the bolls of the cotton tree. A single pair of boll weevils will multiply in a single season into millions of ravenous and destructive insects.

Some time ago the investigators of the Department of Agriculture learned of a variety of cotton grown by the Indians in Guatemala which seemed not to be subject to the attacks of the boll weevil.

The Secretary of Agriculture accordingly dispatched Mr O. F. Cook to Guatemala to ascertain whether it possessed in reality any quality enabling it to resist the boll weevil or to learn other causes of its immunity from the attacks of the insect.

A thorough search by Mr Cook shows that the weevil is present and able to injure the cotton, but reveals also an active enemy which keeps it in check. This is a large reddish-brown ant, which is attracted to the cotton by the food which it secures from three sets of extra floral nectaries.

The ant attacks the weevil on sight and finds it an easy prey. The ant's mandibles are large enough to grasp the weevil around the middle and pry apart the joint between the thorax and the abdomen. The long flexible body is bent at the same time in a circle, to insert the sting at the unprotected point where the beetle's strong amoris open.

The poison takes effect instantly, the beetle ceases to struggle, and, with its legs twitching feebly, is carried away in the jaws of its captor. As with many other insects when stung by wasps, the paralysis is permanent. Even when taken away from the ants, the beetles do not recover.

The adroit and businesslike manner in which the beetle is disposed of seems to prove beyond question that the ant is by structure and by instinct especially equipped for the work of destruction, and is, in short, the true explanation of the fact that cotton is successfully cultivated by the Indians of Alta Vera Paz in spite of the presence of the boll weevil.

Instead of congregating in large numbers on the cotton in the immediate vicinity of their nests, the ants have, as it were, the good sense to spread themselves through the field, from two to four and five usually being found doing inspection duty on each plant. In some places there seemed to be not enough ants to go around, and here the beetles were more numerous. Rarely, too, certain flowers or branches seemed to have been overlooked, beetles being found on the same plants with the ants. In such instances, indeed, the young flower or boll was generally riddled with punctures, as though many beetles had availed themselves of a rare opportunity of feeding undisturbed.

Cotton-growing among the Indians is something of a special art, the community being supplied by a few men, aware, as it were, of the secrets of the business. They know nothing about the weevil and its ravages, and ascribe such damage as occurs to other harmless insects or even to superstitious causes, such as the failure of the owner to abstain from salt at the time of planting. The ant, however, is definitely associated in their minds with cotton, and they do not expect to secure a good crop unless these insects favor the plants with their presence. Some of the Indians give the ant a special name, "kelep," not applied to any other

species, but it is also referred to as "the animal of the cotton."

The perennial tree cotton furnishes permanent breeding places, so that the conditions are most favorable to the propagation of the beetles in large numbers. The ants, however, are evidently able to hold them in check, and thus permit the regular cultivation of the annual variety of cotton by the Indians.

If the cotton ant can survive a long dry season and perhaps cold weather in the table-lands of Guatemala, it might easily learn to hibernate in Texas, as has the boll weevil. The ant, indeed, is much better able to protect itself against frost, since it excavates a nest three feet or more in the ground. That it is a reasonably hardy insect is shown also by the fact that several individuals have survived confinement for twelve days without food and seem now to be thriving on a diet of cane juice. To take worker ants to Texas will be evidently a very easy matter, but to obtain queens and to establish permanent colonies may require considerable time and experiment and a thorough study of all the habits of the species.

Although the cotton seems to be especially adapted to attract the ant by means of its numerous nectaries, the insect is not, like some of the members of its class, confined to a single plant or to a single kind of prey. It was observed running about on plants of many different families, and it attacks and destroys insects of every order, including the hemiptera, and even centipedes. On the other hand, it does not do the least injury to the cotton or to any other plant, so far as has been ascertained, and it can be handled with impunity, having none of the waspish ill temper of so many of the stinging and biting ants of the tropics.

Since where once established it exists in large numbers and seeks its prey actively, the ant is a much more efficient destroyer of noxious insects than the spider or the toad. It seems, in short, not unlikely to become a valued asset in the agriculture of tropical and subtropical countries, if not in temperate regions.

Efforts will immediately be directed toward introducing the ant to the cotton fields of Texas. Mr Cook has been supplied with all the funds and assistance he needs, and the Secretary of Agriculture will be much disappointed if good results are not realized.

GEOGRAPHIC NOTES

SIR HENRY M. STANLEY

1841–May 10, 1904

WHEN in 1870 the world became alarmed at not hearing from Livingstone for some time, Stanley, the soldier, newspaper correspondent, and Abyssinian explorer, was dispatched to find him by James Gordon Bennett, of the New York *Herald*.

Stanley cut across from Zanzibar and found Livingstone at Ujiji, on Lake Tanganyika. He had been surrounded by Arab slavers, his supplies destroyed, and his communication with the seacoast interrupted. After being relieved by Stanley, Livingstone returned to Lake Bangweolo, where he died in 1873.

In 1874 Stanley took up the work of Livingstone. He started from Zanzibar. After circling Victoria Nyanza, he explored Albert Nyanza and Tanganyika, and discovered Albert Edward Nyanza. He then descended the Lualaba Basin, which brought him to the Kongo, which he followed to the ocean.

Stanley was thus able to solve the last great African problem, namely, that

Tanganyika and the waters west of it belonged to the basin of the Kongo and and not to the Nile.

But of more practical value than the determination of the question of the headwaters of this river was the opening up to the commerce of the world of the densely populated countries along the banks of the Kongo and its tributaries. Stanley realized the rich commerce that could be developed among the millions of Africans. He forced Europe to his way of thinking, and more than any other individual precipitated the partition of Africa. He was chosen to be the first organizer and administrator of the Kongo regions, where in five years he introduced order and government. He lived to see railways and telegraph lines built and steamers whistling in the wilderness he opened, and an annual commerce amounting to $20,000,000 for the Kongo territory alone.

In 1887 Stanley started to cross Africa again, this time from west to east, to relieve Emin Pasha. After leaving the Kongo he forced his way through a vast, almost impenetrable, forest, and saw the pigmies discovered by Du Chaillu twenty-five years before, and the Mountains of the Moon.

MAP OF THE WORLD ON THE EQUIVALENT PROJECTION

LOOKING at the ordinary map of the world on Mercator's projection, one would imagine that Canada was twice the size of the United States, when as a matter of fact it is only slightly larger. Similarly Siberia and all lands distant from the equator are vastly exaggerated to the eye on Mercator's projection. Hence a large and convenient wall map of the world, that will give each country, whether on the equator or in the arctics, in true proportion is welcome, specially in these days when there is so much desire to compare the enormous recent territorial expansion of the powers. Such a map, giving the areas of all lands in true proportion, has just been published by C. S. Hammond Co., of New York. The map is 3 feet 8 inches by 5 feet and in 7 colors. The projection used was invented by Prof. C. B. Mollweide, in 1805. It is an equal-surface projection in which the entire surface of the earth is represented inclosed within an elliptic outline, whose major and minor axes represent the equator and central meridian respectively with a ratio of 2 to 1. The parallels are straight lines, and the meridians, ellipses, and each zone or subdivision of the projection is in due proportion to the corresponding area on the sphere. The distances of the parallels from the equator line are computed from the formula characteristic of the projection. The meridians are placed 15 degrees apart.

The map published by C. S. Hammond Co. has four insert maps, each 11 by 8 inches—Asia, Europe, United States, and the world on Mercator's projection. It contains an index of the principal countries, giving the area and population, and an index of the islands and of the principal cities. The Americas occupy the center of the map. The price of the map is $5.00, mounted on rollers and backed with cloth.

PEARY'S PLANS FOR HIS POLAR EXPEDITION

COMMANDER R. E. PEARY, U. S. N., is making arrangements to send an auxiliary ship to the Arctic this summer, going as far north as Etah and Cape Sabine (79 degrees north latitude). The ship will place a depot of coal and Commander Peary will make arrangements with the Whale Sound Eskimos to collect meat and various provisions for the use of his North Polar expedition during the year 1905. The auxiliary ship will go north about the first of July and return about the first of September. The itinerary of

the voyage will include ports of the Newfoundland, Labrador, Greenland, Ellesmere Land, and the Baffin's Bay coast. The unique feature of this preliminary trip will be the fact that Commander Peary has made arrangements to comfortably accommodate a number of passengers. The opportunity to bag walrus and polar bears will doubtless attract many sportsmen, while scientific men will be interested in this unusual opportunity to study ethnology and geology of the great white North. Commander Peary has entrusted the details of making up the party to the Committee on Applications, at 3 West Twenty-ninth street, New York city.

SOME RECENT ENGLISH STATEMENTS ABOUT THE ANTARCTIC

IN an article about the English Antarctic Expedition in the *Scottish Geographical Magazine* for May, 1904, at page 265, it is stated that "the *Discovery* succeeded in proving the non-existence of Wilkes Land." In an article by Sir Clements R. Markham, President of the Royal Geographic Society, "The Antarctic Expedition," in *The Geographical Journal* for May, 1904, at page 551, he states: "On March 2 the *Discovery* passed through the Balleny group. Continuing westward to the 156th meridian, near Adélie Land, it was found that the coast line shown on the chart east of that land is a mistake. No such land exists."

If Captain Scott, after passing through the Balleny Islands, *only sailed as far west as the 156th meridian*, he could at the most have disproved the existence of the extremest western points which Wilkes thought he sighted, namely, Ringgold Knoll and Eld Peak; but as nothing appears to be said so far of the latitude in which the *Discovery* sailed west, even this must remain an open question until further information; and the statement that "the *Discovery* succeeded in proving the non-existence of Wilkes Land," which extends for some fifty-five degrees of longitude west of 156° east longitude, is simply preposterous.

If Captain Scott did not sail west of 156° east longitude, he did not get within some sixteen degrees of longitude, over three hundred miles, of Adélie Land, and he did not approach Cape Hudson, Point Emmons, Point Case, Point Alden, Peacock Bay, and Disappointment Bay, and therefore Sir Clements R. Markham's statement "that the coast line shown on the chart east of that [Adélie] land is a mistake; no such land exists," is entirely unwarranted.

It seems well to call the attention of Americans to this matter, so that they may take cognizance of the fact that some British geographers, led by Sir Clements R. Markham, will perhaps make renewed efforts to smother and obliterate all remembrance of American discoveries in the Antarctic.

EDWIN SWIFT BALCH.

Philadelphia, May 21, 1904.

SEARCH FOR BARON TOLL

THE Imperial Academy of Sciences at St Petersburg has offered a reward for finding Baron Toll's expedition or any traces of it.

Baron Edward Toll, chief of the Polar expedition sent out by the Academy of Sciences, left the Bennett Island, lying north of New Siberia, on November 8, 1902, taking a southern direction. He was accompanied by the astronomer Seeberg and two Jakoots, Vassily Gorokhov, with the surname Chichak, and Nicolas Protodiakonow, with the surname Omook. The party seem to have been carried away by the ice, as the searches heretofore have been in vain. A reward of 5,000 roubles is offered by the Academy of Sciences for finding the whole party or any part of it, and a reward of 2,500 roubles for giving the first exact indications of tracing the party.

A REMARKABLE WATERSHED IN PENNSYLVANIA

ON the same farm in Potter county, Pennsylvania, are two strong, clear springs which bubble up out of the white sand with great force, and about three miles distant is another spring of like character.

If a chip were thrown into each of these and could float on uninterruptedly to the sea, they would reach their destination many thousands of miles apart. One is the fountain head of the Genesee River, which flows into Lake Ontario, and finally reaches the sea at the mouth of the Gulf of St Lawrence. The other is the fountain head of the Allegheny River, which unites at Pittsburg with the Monongahela to form the Ohio, and reaches the sea at the mouth of the Mississippi. The third is the fountain head of Pine Creek, which flows into the West Branch of the Susquehanna, and reaches the sea at Chesapeake Bay.

THOMAS W. LLOYD.

Montoursville, Pa

SILKWORM CULTURE

THE Department of Agriculture is investigating the possibilities of silkworm culture in the United States. It is hoped that it may in time be developed to such an extent as to prove of benefit to those members of families whose time is not altogether occupied in other ways. To persons wishing to experiment, and who can furnish proper food for the worms, the Department is distributing free of charge a small quantity of silkworm eggs and also a manual of instructions. The proper food for silkworms consists of leaves from the different varieties of white mulberry tree and the Osage orange. The paper mulberry (with the fuzzy leaves) is not suitable, nor is the common red mulberry. As the season is now open, applications for the eggs should be made at once, and must be accompanied by a statement as to the number and kind of mulberry trees or the amount of Osage orange which the applicant possesses; otherwise the eggs will not be sent. If the variety of the mulberry is not known to the applicant, a sample of large leaves should be sent to the Department. The Department of Agriculture buys the cocoons which the worms spin, paying for them (after they have been dried) 75 cents to $1 a pound, according to their quality. The work will prove an interesting pastime for women and children who can devote to it odd minutes during the day.

The first journey across Alaska, from Skagway to the Arctic Ocean, made by W. J. Peters and F. C. Schrader in 1901, is described by them in a handsome report just published by the Geological Survey. The journey involved a sledge trip with dogs of 1,600 miles, and from the Yukon to the Arctic Ocean was through country which had not been previously penetrated by white men. Nothing in Alaskan or Arctic exploration surpasses the harditude of these two men pushing across the unknown arctic wilderness and trusting to luck to meet a whaling ship on the coast to bring them home. Mr Schrader, with Alfred H. Brooks, was the Geological Survey explorer of Cape Nome in 1899, and with Gerdine, Witherspoon, and Mendenhall, of the Wrangell Mountains in 1900 and 1902. Mr Peters is at present with the Ziegler Polar Expedition as the representative of the National Geographic Society and director of the scientific work of the expedition.

An interesting comparison of the amount of goods shipped abroad from the different ports of the United States in 1903 and 1893 has been prepared by the Bureau of Statistics. New York, New Orleans, and Galveston show the largest gain. New York's exports have grown from 357 million dollars in 1893 to 516 millions in 1903; those of New Orleans, from 85 millions in 1893 to 150

millions in 1903; and those of Galveston, from 36 millions in 1893 to 144 millions in 1903. Baltimore shows an increase in exports from 75 millions to 84 millions; Boston, from 83 millions to 86 millions; Philadelphia, from 43 millions to 73 millions; Newport News, from 10 millions to 20 millions; Savannah, from 23 millions to 58 millions; San Francisco, from 29 millions to 32 millions; and Puget Sound, from 5 millions to 27 millions of dollars. Charleston, S. C., shows a decrease from 11 millions to 3.5 millions, and Norfolk from 11 millions to 9 millions. The proportion of imports entering these ports differs little from earlier years.

Frederick A. Walpole, the botanical artist of the Department of Agriculture, and a member of the National Geographic Society, died May 11, 1904, of typhoid fever, at Cottage Hospital, Santa Barbara, Cal. He was considered the best plant artist in the United States, his drawings having been used to illustrate various reports published by the Department of Agriculture and the Smithsonian Institution, as well as the narrative of the Harriman Alaska Expedition. The greater part of his drawings remain unpublished, including a remarkable series of colored paintings of the native poisonous plants of the United States now on exhibition by the Department of Agriculure at St Louis. Mr Walpole's death is regarded as an irreparable loss to botanical science. Mr Walpole was born in Essex county, New York, in 1861.

A New Pacific Coal Field.—The importance to the whole Pacific coast of an extensive deposit of good Alaskan coal that is accessible to the ocean can not be overestimated. Such a coal field, according to the report of Dr G. C. Martin, of the U. S. Geological Survey, is situated from 12 to 25 miles inland from Controller Bay, Alaska. It is in the valley of the Bering River, a good-sized stream which flows into Controller Bay east of Copper River. This coal area, as at present recognized, covers an area of 80 miles, the largest seam being 20 feet thick, and was surveyed by Dr Martin in 1903. The coal is hard bituminous.

A new meteorological observatory is to be established at Tortosa, on the eastern coast of the Spanish Peninsula, some 119 miles from Valencia. This new observatory, which is to be built by the Jesuits, will be known as the "Observatorio de Fisica Cosmica del Ebro" (Physical and Cosmical Observatory of the Ebro). The buildings will be erected in the form of a cross, comprising four main rooms, separated from each other, and several partly subterranean apartments reserved for the installation of instruments of exceptionally delicate construction.

The management and direction of the installation is to be entrusted to Father Cirera, a man who stands remarkably high among experts in the cosmical, meteorological, and astronomical sciences. He has spent the past four years in carefully studying the most noted observatories of Europe, after having established and directed for six years the magnetic department of the well-known observatory at Manila, which has rendered and continues to render such invaluable services to the navigators of all nations.

H. A. JOHNSON,
U. S. Consul, Valencia.

A Map of St Louis.—One of the most appropriate exhibits to be made by the U. S. Geological Survey at the Louisiana Purchase Exposition this summer will be a topographic map of the city of St Louis and its environs. Copies of this map, which is mainly a result of surveys made by Mr Charles E. Cooke, topographer, will be distributed gratuitously to Exposition visitors as a memento of the Survey's work.

GEOGRAPHIC LITERATURE

Webster's International Dictionary of the English Language. Being the authentic edition of Webster's Unabridged Dictionary, comprising the issues of 1864, 1879, and 1884, thoroughly revised and much enlarged under the supervision of Noah Porter, D. D., LL. D. With a voluminous appendix, to which is now added a Supplement of twenty-five thousand words and phrases, a Gazetteer of the world containing 25,000 names, etc., etc. W.T. Harris, Ph. D., LL. D., editor-in-chief. Pp. 2358. 12x9½x4½ inches. Springfield, Mass., U. S. A.: G. & C. Merriam Company. 1904.

To the reader of this Magazine the most useful feature of this new edition of Webster's International Dictionary is the completely revised "Pronouncing Gazetteer of 25,000 Place Names." During the past few years thousands of new towns have sprung into prominence in the Philippines, China, Siberia, South Africa, etc., many of which it has hitherto been impossible to locate, unless perhaps in some unobtainable official gazetteer. All these names with concise descriptions giving the results of latest geographical discoveries and of the censuses throughout the world in 1900 and 1901, have been included in the revised edition, so that for completeness and convenience Webster's Gazetteer is now unequaled. Every one will welcome the uniform spelling of place names, due to the wise adoption by the editors of the rulings of the U. S. Board on Geographic Names, of the Canadian Board on Geographic Names, and of the Royal Geographical Society. All questionable cases were referred to Henry Gannett, Chairman of the U. S. Board.

Another indispensable feature of the new edition is the inclusion in the Supplement of hundreds of new terms that have arisen in the many branches of geography during the past decade The editor for geology and geography was G. K. Gilbert; for meteorology, Gen. A. W. Greely; for agriculture, A. C. True.

The recent rapid changes and additions to the English language have striking evidence in the 25,000 words of the Supplement. These 25,000 names represent 10 years' growth in the English language—the thousands of new words that have come into use, the old words that have changed their meanings, and obsolete words that have been revived. Probably no equal period in the development of the English-speaking race has received so many new names. One reason that the past decade has been so prolific in creating names is the succession of new discoveries in all branches of sciences and life. Another is the closer union of all peoples, new relations and new conditions which require definition.

Some idea of the wealth in the volume may be obtained from the statement of the publishers that the amount of matter it contains would make 75 or more volumes such as are usually sold for $1 each. Notable features of work in addition to the Dictionary, Supplement, and Gazetteer are:

Colored plates of flags, seals, etc., of the nations and states, 8 pages; portrait of Noah Webster; preface by Noah Porter, D. D., LL. D.; memoir of Noah Webster; prefaces to various editions of Webster's Unabridged Dictionary; list of authors quoted as authority in this dictionary; brief history of the English language; Indo-Germanic roots in English; explanatory notes on the revised etymologies; guide to pronunciation; orthography; the metric system of weights and measures; explanatory and pronouncing dictionary of the names of noted fictitious persons and places; completely revised pronouncing biographical dictionary of 10.000 names; pro-

nouncing vocabulary of Scripture proper names; pronouncing vocabulary of Greek and Latin names; pronouncing vocabulary of common English Christian names; quotations, words, phrases, proverbs, and colloquial expressions, from the Greek, the Latin, and modern foreign languages; abbreviations and contractions used in writing and printing, also arbitrary signs used in writing and printing; 70 quarto pages containing 5,000 pictorial illustrations, in addition to the thousands of text figures in the Dictionary and Supplement.

Carpenter's Geographical Reader; Australia, our Colonies, and other Islands of the Sea. By Frank G. Carpenter. Illustrated. Pp. 388. 5½ by 7½ inches. New York: American Book Company. $0.60.

A well illustrated, well written, and trustworthy reader. It is the fifth book of Mr Carpenter's admirable series, the others, North America, South America, Europe, and Asia, being in general use throughout the United States. A volume on Africa is in press.

Handy World Atlas and Gazetteer. 3¾ x 6 inches. New York: F. Warne & Co. 40 cents.

For the price, this is an admirable pocket atlas. It contains 120 maps and 10,000 entries in the Gazetteer. The maps are by John Bartholomew & Co.

The Philippine Islands, 1493–1898. Volume XII. 1601–1604. By Blair and Robertson. Illustrated. Pp. 321. 6½ by 9½ inches. Cleveland, Ohio: Arthur H. Clark Company. 1904.

The documents contained in volume XII cover 1601–'03. The two notable events of this period are the great fire and the Chinese revolt, which ended in the slaughter or expulsion of all the Chinese on the islands. Frequent references are made to the raids of the Mindanao pirates. The special feature of the book is the first appearance in English of Chirino's "Relacion," giving an able description of the peoples, their customs, life, etc., and of the missions during 1595–1602.

Six Mois Dans L'Himalaya, Le Karakomin, et L'Hindu-Kush. Dr J. Jacot Guillamond. With maps and illustrations. Pp. 360. 6½ by 9¼ inches. Neuchatel. W. Sandoz, editeur. 1904.

This is the account of explorations in 1902 among the highest mountains of the world by the author and O. Eckenstein, A. E. Crowley, and M. G. Knowles. It is printed in large type and on heavy paper. The illustrations of scores of superb peaks and massive glaciers are wonderfully beautiful and impressive.

Early Western Travels, 1748–1846. Vol. II. John Long's Journal, 1768–1782. Pp. 329. Cleveland: The Arthur H. Clark Co. 1904.

John Long, to whose travels the second volume of this admirable series is devoted, was an Indian interpreter and trader. His travels covered the region of the Great Lakes and the country to the northward.

A biographical sketch of the author of each journal precedes it, and the notes and annotations are admirable, enabling the reader to follow the routes, filling in and amplifying the scanty references to incidents, customs, etc. The series of volumes will serve a very valuable purpose in rescuing from loss a body of early history of which our knowledge is very meagre. H. G.

Japan Today. By James A. B. Scherer. Illustrated. Pp. 323. Philadelphia: J. B. Lippincott & Co. 1904.

A series of sketches and descriptions, rather disconnected but very pleasantly drawn, by a teacher in the public schools of Japan. There is visible here, as in most recent books on Japan and her people, a notable tendency to exaggerate

their recent progress and achievements, even while admitting their faults. When it is stated in one breath that illiterate Japanese are practically unknown, and in the next that only about 10 per cent of the population attend school—*i. e.*, half the proportion of this country, where illiterates *are* found—one finds himself disposed to question other statements. The story of the growth of Japan during the half century of her emancipation is strange enough, without recourse to exaggeration of her present condition. H. G.

Handbook of Commercial Geography. By George G. Chisholm. 4th edition. Illustrated. Pp. 639. New York: Longmans, Green & Co. 1903.

This work, the pioneer text-book in commercial geography, was first issued in 1889, and has since held its position as the standard work on the subject. Since its first publication, and in some measure at least as a result, the subject of commercial geography has grown to great importance, and is now taught in most of our high schools and in many colleges. It is unnecessary to characterize this book, as it is well known wherever the English language is used and commercial geography is taught. It is sufficient to say that in its successive editions the author has kept pace with the development of his subject, and the book is still the standard authority.

Turkish Life in Town and Country. By Lucy M. J. Garnett. Pp. 336. 1904.

Austro-Hungarian Life in Town and Country. By Francis H. E. Palmer. Pp. 301. 1903.

The above volumes are parts of a series of "Our European Neighbors," edited by William H. Dawson and published by G. P. Putnam's Sons, New York.

Both volumes are interesting accounts of the home life of people little known to American readers. The first, besides treating adequately of the institutions of the country and the home life of its people, gives the reader a view of the harem and of the Sultan's household at Yildiz Kiosk. It tells also of the other peoples besides Turks who are under the Sultan's sway—the Albanians, Macedonians, Armenians, and Hebrews—closing with a chapter on the brigands, without which the story of Turkey would be incomplete. The reader feels that here he has a dispassionate account of the Sultan's peoples.

The story of the Austro-Hungarians is equally well told, and, while the home life of the various races which go to make up this strangely assorted monarchy is graphically described, much attention is given to the complex political conditions produced by harnessing together these incongruous peoples, Germans, Magyars, Slavs, and others, and to the economic condition of the peoples. H. G.

ARTICLES FROM MAY MAGAZINES.

Geology and Geo-botany of Asia, Prince Kropotkin. Popular Science Monthly.

Japan of Today, Hiroshi Yoshida. New England.

Tasmania's Halcyon Isle, R. E. Macnaghten. Pall Mall.

Russia in the Far East, Count Cassini. North American Review.

England and Russia in Tibet, Oscar T. Crosby. Do.

Size of the World's Great Cities, A. T. Dolling. Strand.

The Italian Marshes, L. D. Handley. Outdoors.

The Fleet on the Labrador, Norman Duncan. Harper's.

Aeronautic Spiders, H. C. McCook. Do.

The Passing of Finland, Gilson Willetts. Everybody's.

Somaliland, R. A. M. Hardy. Scot. Geog. Journal.

Opal Formations of Australia, R. M. Macdonald. Do.

The Burden Bearers of the World. Outing.

On Lonely Bird Key, Herbert K. Job. Do.

The Two Pacifics: If Japan Should Win, Harold Bolce. The Booklovers' Magazine.

The Yellowstone National Park, Arnold Hague. Scribner's Magazine.

The Northeast Coast of Brazil in Ancient Cartography, Dr. Orville A. Derby. Science, April 29.

Japan and Korea, Colgate Baker. Pearson's.

The Birth of Great Trees, G. Clark Nuttall. Do.

The Siberian Railway. The World To-day.

The Great River V. The Rise and Fall of the Steamboat Business, H. M. Chittenden. Do.

Ferns and their Habits, C. E. Waters. Do.

Wonderful Whale-Hunting by Steam, P. T. McGrath. The Cosmopolitan.

Hanging Valleys in the Finger Lake Region of Central New York, R. S Tarr. The American Geologist.

Germany in Southern Brazil, George A. Chamberlain. The Independent, May 5.

Savage and Civilized Dress, Edwin Swift Balch. Journal of the Franklin Institute.

Climatic Features of the Field of the Russo-Japanese War, Frank Waldo. Review of Reviews.

Unhappy Korea. Arthur Judson Brown. Century.

Korea, the Bone of Contention, Homer B. Hulbert. Do.

Russia and Japan, Captain Brinkley. National Review.

A corner of Italy, R. Phillips. English Illustrated Magazine.

Women and Girls of Japan, Clive Holland. Do.

Exploration in Southern Borderland of Abyssinia, Philip Maud. Geographical Journal.

Rescue of Swedish Antarctic Expedition, Lieut. Julian Gizar. Do.

Acre Territory and Caoutchouc Region of Southwestern Amazonia. Col. G. E. Church. Do.

A Journey from Peking to Tsitsihar, Claud Russell. Do.

Cuba, Matthew Hanna. Chautauquan.

Ants and Their Herds, A. B. Comstock. Do.

Development of West Africa by Railways, Fred Shelford. Journal Royal Colonial Institute

Delta of the Mississippi. F. E. Lloyd. Journal of Geography.

Motions of the Earth. F. R. Moulton. Do.

CONSULAR REPORTS

Articles in recent consular reports of special note are:

Oil Fields and Petroleum Industry of Russia, no. 1941.

Development of East Africa, no. 1935.

German Merchant Marine, no. 1917.

Chinese Emigration, no. 1961.

Abyssinia, no. 1940.

French Fisheries of Saint Pierre and Miquelon, no. 1945.

American Trade in Manchuria, no. 1960.

Foreign Commerce of Argentine, no. 1947.

DECISIONS OF U. S. BOARD ON GEOGRAPHIC NAMES.

Approved January 6, 1904.

Allegrippis; ridge in Huntingdon County, Pennsylvania (not Allegrippes nor Allegripus).

Beckley; pond in town of Norfolk, Litchfield County, Connecticut (not Blakley nor Blakeley).

Brannock; bay, Dorchester County, Maryland (not Bronnack, Brannack, nor Brannocks).

Bumkin; island, Higham Bay, town of Hull, Plymouth County, Massachusetts (not Pumpkin).

Celoron; post-office and railroad station, Chautauqua County, New York (not Celeron).

Cienega del Gabilan; land grant, San Benito County, California (not Sienega del Gabilan).

Dorseys; creek on north side of Annapolis, Anne Arundel County, Maryland (not Graveyard, Dorsey, nor College).

Highland; lake in town of Winchester, Litchfield County, Connecticut (not Long).

Inchwagh; lake in Livingston County, Michigan (not Nitchwage nor Michuaga).

Lemon Fair; river, Addison County, Vermont (not Lemonfair nor Lemonfare).

Morgan River; stream in Barkhampsted, Litchfield County, Connecticut (not Mohawk Brook).

Rocky Mount; post-office, town, and township in Edgecombe County, and town and township in Nash County, North Carolina (not Rockymount).

Rosbys Rock; post-office and railroad station, Marshall County, West Virginia (not Rosbysrock nor Rosbbys Rock).

Sollers; railroad station and point in Patapsco River, Baltimore County, Maryland (not Sollars nor Soller).

Spa; creek on south side of Annapolis, Anne Arundel County, Maryland (not Spaw nor Spat).

Starvout; post-office, settlement, and creek, Douglas County, Oregon (not Starveout nor Starve Out).

Approved April 6, 1904

Hanna; glacier, west slope of Mount McKinley, Alaska (not Peters).

John Day; river in western Wyoming (not John Days, John Day's, John Grays, John Gray's, John Gray, Greys, nor Grey's).

Keshequa; creek in Livingston County, New York (not Coshaqua, Cashaqua, Kishaqua, nor Kushaqua).

Landenberg; town in Chester county, Pa. (not Landenburg).

Umsteads; point on south side of Magothy River, Anne Arundel County, Md. (not Huddle, Huddle's, Huddles, Umphreys, Umfreys, nor Ulmsteads).

Office Hours: 8.30 A. M. to 5 P. M. Telephone, North 306

NATIONAL GEOGRAPHIC SOCIETY

Hubbard Memorial Hall
Sixteenth and M Streets, Washington, D. C.

W J McGEE . . . . . President
JOHN JOY EDSON . . . . Treasurer
G. K. GILBERT . . . . Vice-President
O. P. AUSTIN . . . . . Secretary
ELIZA R. SCIDMORE . . . Foreign Secretary

BOARD OF MANAGERS

1902-1904	1903-1905	1904-1906
A. GRAHAM BELL	CHARLES J. BELL	HENRY F. BLOUNT
DAVID T. DAY	GEORGE DAVIDSON	C. M. CHESTER
A. W. GREELY	WM. M. DAVIS	F. V. COVILLE
ANGELO HEILPRIN	JOHN JOY EDSON	D. C. GILMAN
RUSSELL HINMAN	G. K. GILBERT	S. H. KAUFFMANN
W J McGEE	A. J. HENRY	WILLIS L. MOORE
GIFFORD PINCHOT	O. P. AUSTIN	ISRAEL C. RUSSELL
HENRY GANNETT	C. HART MERRIAM	R. D. SALISBURY

The National Geographic Magazine is sent free of charge to all members of the National Geographic Society

---

Recommendation for Membership in the NATIONAL GEOGRAPHIC SOCIETY

The following form is enclosed for use in the nomination of persons for membership

Please detach and fill in blanks and send to the Secretary

DUES: Annual membership, $2; Life membership, $50. If check be enclosed, please make it payable to order of the National Geographic Society, and, if at a distance from Washington, remit by New York draft or post-office money-order.

.....190

To the Secretary, National Geographic Society, Washington, D. C.:

Please propose.....

address:.....

.....

for membership in the Society.

.....

Neatness Punctuality Fair Prices

JUDD & DETWEILER

PRINTERS

420-22 ELEVENTH ST. N. W.

WASHINGTON, D. C.

Established 1868 Phone, Main 536

"Pillar'd around by everlasting hills,
Robed in the drapery of descending floods."

NIAGARA

FALLS

One of the natural wonders of the world. A charming place at any season of the year, reached from every direction by the

NEW YORK CENTRAL LINES

A visit to the Falls is an object lesson in Geography; an exhibition of landscapes that no painter can equal, and a glimpse of the latest developments of the industrial world.

A copy of Four-Track Series No. 9, "Two Days at Niagara Falls," will be sent free, upon receipt of a two-cent stamp, by George H. Daniels, General Passenger Agent, Grand Central Station, New York.

WE MAKE THE HALFTONE PLATES FOR THIS MAGAZINE

GATCHEL & MANNING

ILLUSTRATORS
AND ENGRAVERS

27-41 SOUTH SIXTH STREET PHILADELPHIA, PA.

The Manhattan Press-Clipping Bureau

ARTHUR CASSOT, Proprietor

NEW YORK (Knickerbocker Building) LONDON

COR. FIFTH AVENUE AND 14TH STREET, NEW YORK

Will supply you with all personal reference and clippings on any subject from all the papers and periodicals published here and abroad. Our large staff of readers can gather for you more valuable material on any current subject than you can get in a lifetime.

TERMS:

100 clippings . . $ 5.00
250 clippings . . . $ 12.00
500 clippings . . . $22.00
1,000 clippings . . . $35.00

HENRY ROMEIKE'S
BUREAU OF PRESS CUTTINGS

33 Union Square, New York

Reads every paper of importance published in the United States, and through its European agencies in London, Paris, Berlin and Vienna every paper of importance published in Europe and the British Colonies. One subscription on any given subject will bring notices from the United States, and if desired also from the European papers.

WRITE FOR TERMS

Back Volumes

OF THE

National Geographic Magazine

The NATIONAL GEOGRAPHIC MAGAZINE has on hand a few copies of complete back volumes which may be obtained at the following prices:

Vol. 3, 1891 . . .	$5.10	Vol. 9, 1898 . . .	$2.75
Vol. 5, 1893 . . .	4.50	Vol. 11, 1900 . . .	2.50
Vol. 6, 1894-5 . . .	4.20	Vol. 12, 1901 . . .	2.50
Vol. 7, 1896 . . .	3.25		
Vol. 8, 1897 . . .	3.00	Vol. 13, 1902 . . .	2.50

The NATIONAL GEOGRAPHIC MAGAZINE will pay the following prices for copies of certain back numbers:

Vol. 1, 1889, No. 2, $1.00; No. 4, $1.00.

Vol. 2, 1890, No. 2, $1.00.

Vol. 4, 1892, No. 1, $0.50; No. 2, $1.50; No. 3, $0.50; No. 4, $0.50; No. 5, $1.00; No. 6, $1.00.

Vol. 10, 1899, No. 6, $0.50; Index, $0.50.

Vol. 13, 1902, No. 1, $0.30.

Hubbard Memorial Hall . . . Washington, D. C.

OUR department of Office Furniture, located on 6th floor, G St. side, is replete with the largest and most extensive line of Office Furniture we have ever shown, comprising Roll-top Desks, Flat-top Desks, Roll-top Typewriter Desks, Flat-top Typewriter Desks, Typewriter Tables and Cabinets, Office Tables, Revolving and Stationary Chairs, Office Stools, Revolving and Sectional Bookcases, etc. These goods are the product of the best manufacturers in America and have all the qualifications of high-grade furniture. All are made of carefully selected stock, thoroughly seasoned and kiln-dried. The desks are fitted with non-binding drawers. We are also showing a complete line of the celebrated "Danner" Revolving Bookcases, which are conceded to be the best on the market. Especial attention is called to our new Sectional Bookcase, embodying as it does all the best points of other makes and several new ones of its own. We offer a special lot of these Bookcases, in weathered oak finish, complete in 4 sections, with base and top, non-binding doors and dust-proof sections; inside nicely finished and no metal bands or clips showing at the joints. Made up in three different size sections.

Office Furniture

$16.00, Complete

WOODWARD AND LOTHROP

New York Washington Paris

SPECIAL MAPS PUBLISHED BY THE NATIONAL GEOGRAPHIC SOCIETY

Map of Manchuria and Korea (36 x 42 inches).
Prepared under the direction of the War Department.

Map of the Philippines (5 feet 2 inches x 3 feet).
Prepared under the direction of the War Department.

Map of South Africa (46 x 33 inches).
Prepared under the direction of the War Department.

Map of Northeastern China (36 x 28 inches).
Prepared under the direction of the War Department.

Map of Alaska (28 x 24 inches).
Prepared under the direction of the U. S. Geological Survey.

Map Showing Alaskan Boundary Award (12 x 12 inches).
Prepared under the direction of the U. S. Coast and Geodetic Survey.

A Series of Twelve Maps on the Alaskan Boundary Dispute.
Prepared under the direction of Hon. John W. Foster, ex-Secretary of State.

Chart of the World on Mercator's Projection (48 x 27 inches).
Prepared under the direction of the Hydrographic Office.

Map of Cuba (18 x 7½ inches).
Prepared under the direction of Robert T. Hill.

A Series of Twenty-five Full-page Charts, showing storm tracks and methods of weather forecasting.
Prepared under the direction of Dr. Willis L. Moore, Chief U. S. Weather Bureau.

Panorama of the Wrangell Mountains, Alaska.
A remarkable picture, showing scores of lofty peaks in an area as large as the State of Delaware.

By Mail for Twenty-five Cents Each.

NATIONAL GEOGRAPHIC SOCIETY, Hubbard Memorial Hall, Washington, D. C.

PRESS OF JUDD & DETWEILER, WASHINGTON, D. C.

XUM